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Loren Dean

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LAHIVE & COCKFIELD, LLP/THE MATHWORKS
FLOOR 30, SUITE 3000
One Post Office Square
Boston, MA 02109-2127

EXAMINER

VERDI, KIMBLEANN C

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/671,703	Applicant(s) DEAN ET AL.	
	Examiner KimbleAnn Verdi	Art Unit 2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-21 and 23-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-21 and 23-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 19-21 and 23-44 are pending in the current application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 19-21, 27-29, 31, 33-34, 36, and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breyer et al. (hereinafter Breyer) (U.S. Patent 6,256,625 B1) in view of Williams et al. (hereinafter Williams) (U.S. Patent 5,911,066), and further in view of Biondi et al. (hereinafter Biondi) (U.S. Patent 6,894,802 B1).**
4. **As to claim 19**, Breyer teaches the invention substantially as claimed including a data transfer system for transferring data from a data source to multiple data sink objects in a computer system, wherein the data source is coupled to the computer, the system comprising:

an interface for communicating with the data source to receive the data from the data source (IMAQ Control Object, Fig. 5, col. 2, lines 35-36);

a data processor for encapsulating the data into a data object in memory (CPU 202, Fig. 2); and

5. Breyer does not explicitly disclose a data server for transferring to the multiple data sink objects identification information identifying the data object, the data server providing a pointer indicating the location of the data object in the memory to identify the data object; and

the multiple data sink objects access the data object using the identification information and sharing the data object among the multiple data sink objects to prevent extraneous copies of the data.

6. However, Williams teaches a data server (Data Source 1102, Fig. 11) for transferring to the multiple data sink objects identification information identifying the data object (step 1202, Fig. 12, col. 15, lines 25-27), the data server providing a pointer indicating the location of the data object in the memory to identify the data object (step 1204, Fig. 12, col. 15, lines 25-29); and

the multiple data sink objects access the data object using the identification information (step 1204-1208, Fig. 12, col. 15, lines 27-45 and col. 17, lines 34-36).

7. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified the dynamic binding mechanism of Breyer with the teachings of data transfer mechanisms from Williams and Biondi because these

feature would have provided a mechanism and interface to computer programs so that the computer programs may transfer data in a uniform manner after a connection is established (col. 5, lines 54-58 of Williams) and configure a memory structure in any manner that allows image data received from an image data source at the image data source's data transfer output rate to be stored and transferred to an image data sink at an image data sink's data input rate (col. 2, lines 42-46 of Biondi).

8. Breyer modified by Williams does not explicitly disclose sharing the data object among the multiple data sink objects to prevent extraneous copies of the data.

9. However Biondi teaches sharing the data object among the multiple data sink objects to prevent extraneous copies of the data (col. 4, lines 51-55 and 62-67, and col. 5, lines 1-5, 17-20, and 64-67).

10. **As to claim 20**, Breyer as modified teaches wherein the data server includes a list listing the multiple data sink objects that are registered with the data server (col. 16, lines 8-22 of Williams).

11. **As to claim 21**, Breyer teaches the system of claim 19 wherein the computer system provides a technical computing environment (video capture system, col. 2, lines 23-33).

12. **As to claim 27**, Breyer teaches the system of claim 19 wherein the data source provides data sequence continuously for a period of time (sequence of image data, col. 4, line 37).

13. **As to claim 28**, Breyer teaches the system of claim 19 wherein the data source provides a package of data, the package of data being used independently of other packages of data (compressed data, col. 4, line 37).

14. **As to claim 29**, Breyer teaches the system of claim 28 wherein the package of data includes a frame of image data (video frame, col. 4, lines 31-37).

15. **As to claim 31**, Breyer teaches the system of claim 19 wherein the data processor configures a maximum amount of memory that all data objects use at a given instance of time (col. 6, lines 64-67, col. 7, lines 1-2).

16. **As to claim 33**, Breyer teaches the system of claim 19 wherein the interface, the data processor, and the data server are implemented independently of MATLAB (image application, col. 6, lines 51-54).

17. **As to claim 34**, this claim is rejected for the same reasons as claim 19 since claim 34 recites the same or equivalent invention, see the rejection to claim 19 above.

18. **As to claim 36**, this claim is rejected for the same reasons as claim 21 since claim 36 recites the same or equivalent invention, see the rejection to claim 21 above.

19. **As to claim 42**, Breyer teaches the medium of claim 34 wherein the instructions are run independently of MATLAB (image application, col. 6, lines 51-59).

20. **As to claim 43**, Breyer teaches the medium of claim 34 wherein the instructions are originated from code written with C programming language (col. 11, line 41).

21. **As to claim 44**, Breyer as modified teaches wherein the instructions are originated from code written with an object-oriented programming language such as C++, C# and Java (col. 6, lines 26-27 of Williams).

22. **Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breyer et al. (hereinafter Breyer) (U.S. Patent 6,256,625 B1) in view of Williams et al. (hereinafter Williams) (U.S. Patent 5,911,066), and further in view of Biondi et al. (hereinafter Biondi) (U.S. Patent 6,894,802 B1), as applied to claim 19 above, and further in view of Jevans (U.S. Patent 5,986,667).**

23. **As to claim 23**, Breyer as modified by Williams and further modified by Biondi does not explicitly teach at least one or more data listener object that is registered to a respective one of the multiple data sink objects.

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24. However, Jevans teaches one or more data listener object that is registered to the multiple data sink object (Registering a renderer, col. 11, lines 40-55).

25. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have further modified the image object of Breyer as modified by Williams and as further modified by Biondi with the teachings of a renderer from Jevans because this feature would have further provided a mechanism which allows retained-mode building and editing of a model, independently of the choice of renderer in a graphics rendering system (col. 5, lines 57-60 of Jevans).

26. **As to claim 24**, Breyer as further modified teaches the system of claim 23 wherein the respective data sink object deletes each of the at least one data listener objects registered with the data sink object when the respective data sink object is deleted (object delete function, lines 40-55 of Jevans).

27. **As to claim 25**, Breyer as further modified teaches the system of claim 23 wherein the respective data sink object notifies each of the at least one data listener when state of the respective data sink object changes (ErWF_Register:TypeChangedMethod, col. 11, lines 45-67, col. 12, lines 1-20 of Jevans).

28. **As to claim 26**, Breyer as further modified teaches the system of claim 23 wherein the respective data sink object notifies each of the at least one data listener when the respective data sink object is updated with a new data object (ErWF_Register:AttributeSetChangedMethod, col. 11, lines 45-67, col. 12, lines 1-20 of Jevans).

29. **Claims 30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breyer et al. (hereinafter Breyer) (U.S. Patent 6,256,625 B1) in view of Williams et al. (hereinafter Williams) (U.S. Patent 5,911,066), and further in view of Biondi et al. (hereinafter Biondi) (U.S. Patent 6,894,802 B1), as applied to claims 19 and 28 above, and further in view of Rhoades et al. (hereinafter Rhoades) (U.S. Publication No. 2003/0041163 A1).**

30. **As to claim 30**, Breyer as modified by Williams and further modified by Biondi does not explicitly teach wherein the package of data includes a scan of radar, sensor, or audio data, as well as network data packets.

31. However, Rhoades teaches wherein the package of data includes a scan of radar, sensor, or audio data, as well as network data packets (paragraph 0127).

32. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have further modified the image data of Breyer as modified by

Williams and as further modified by Biondi with the teachings of a data packet from Rhoades because this feature would have further provided a new processor architecture that is suitable, specifically but not exclusively, for Data Flow processing problems (paragraph 0010 of Rhoades).

33. **As to claim 32**, Breyer as further modified teaches the system of claim 19 further comprising a processor for controlling the interface, the data processor, and the data server, wherein the processor is 64 bits or more (ALU of processor, paragraph 0088 of Rhoades).

34. **Claims 35, 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breyer et al. (hereinafter Breyer) (U.S. Patent 6,256,625 B1) in view of Williams et al. (hereinafter Williams) (U.S. Patent 5,911,066), and further in view of Biondi et al. (hereinafter Biondi) (U.S. Patent 6,894,802 B1), as applied to claim 34 above, and further in view of Hewett (U.S. Patent 6,823,524 B1).**

35. **As to claim 35**, Breyer as modified by Williams and as further modified by Biondi does not explicitly teach a data sink listener object that is registered with one or more of the data sink objects.

36. However, Hewett teaches a data sink listener object that is registered with one or more of the data sink objects (event generator object (A) 30, Fig. 5, event listener object (B) 32, Fig. 5, col. 4, lines 27-30, and step 64, Fig. 6, col. 4, lines 61-64).

37. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have further modified the image object of Breyer as modified by Williams and as further modified by Biondi with the teachings of an event object from Hewett because this feature would have further provided a mechanism for a object-oriented data processing system which uses events to pass control from an event generator object to a listener object (col. 1, lines 21-25 of Hewett).

38. **As to claim 37**, Breyer further as modified teaches the medium of claim 35 wherein the data sink listener object performs a task relating to a function of a respective one of data sink object (object B can receive and execute event E1, col. 4, lines 3-9 of Hewett).

39. **As to claim 38**, Breyer as further modified teaches the medium of claim 35 wherein the data sink listener object performs a task relating to a function of a respective one of the data sink object on a thread of the data server object (run on common thread, col. 4, lines 24-25 of Hewett).

40. **As to claim 39**, Breyer as further modified teaches the medium of claim 35 wherein the data sink listener object performs a task relating to a function of a respective one of the data sink object on a thread different from that of the data server object (NLS objects run on separate threads 46, 50, Fig. 5, col. 4, lines 40-45 and step 86, Fig. 7 of Hewett).

41. **As to claim 40**, Breyer as further modified teaches the medium of claim 34 wherein at least one of the data sink object perform a function on a thread of the data server object (step 82, Fig. 7 of Hewett).

42. **As to claim 41**, Breyer as further modified teaches the medium of claim 34 wherein at least one of the data sink object perform a function on a thread different from that of the data server object (event generator object passes event objects in separate threads, col. 4, lines 50-53 of Hewett).

Response to Arguments

43. Applicant's arguments filed on January 23, 2009 have been fully considered but they are not persuasive. In response to the Final Office Action dated October 29, 2008, applicant argues in regards to claims 19-21 and 23-44:

(1) **Biondi, alone or in combination with Breyer and Williams, does not disclose or suggest sharing the data object among the multiple data sink objects**

to prevent extraneous copies of the data as recited in claim 19. In contrast, Biondi discusses directly transferring the image data to the image data sink. Biondi does not share the data object among the multiple data sink objects (page 4, lines 4-8).

In response to argument (1), examiner respectfully disagrees and notes that Biondi teaches the network storage device 310 acts as the memory 100, as discussed above, to buffer and then transfer the image data object, to the image data sinks 320 and 330 (col. 4, lines 53-55). The disclosed method may be readily implemented in software using object or object-oriented software development environments that provide portable source code that can be used on a variety of computer or workstation hardware platforms (col. 5, lines 64-67).

The transferring of the image data, which corresponds to the data object, to the image data sinks 320 and 330, which correspond to the data sink objects, can be interpreted as sharing the data object among the multiple data sink objects to prevent extraneous copies of the data when the method is implemented using an object-oriented software environment (col. 5, lines 64-67), since the images can also be sent via multiple connections through multiple interfaces, the images can also be sent to many destinations, and the image data sink 60 may be one or more of a combination of the network storage device 310, image data sink 320 and/or the image data sink 330. (col. 5, lines 15-20).

Conclusion

44. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

45. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

46. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KimbleAnn Verdi whose telephone number is (571)270-1654. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm EST..

47. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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48. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Li B. Zhen/
Primary Examiner, Art Unit 2194

April 18, 2009

KV